

PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Improved Jamming Cleat

I, REGINALD JOHN EMERY, a British Subject, of 88, Sweet Briar, Welwyn Garden City, Hertfordshire, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to an improved jamming cleat, for releasably holding ropes, cords, cables and similar elongate articles.

According to the invention there is provided with a jamming cleat having a groove opening out of one side and extending over the whole length of the cleat the groove having opposed internal faces which converge towards the bottom of the groove and ridges on each face, the ridges on both faces being inclined to the base of the groove upwardly from one end of the groove.

Preferred forms of the invention will now be described with reference to the accompanying diagrammatic drawings, in which:—

Figure 1 is a side elevation of a cleat according to the invention,

Figure 2 is an enlarged sectional view taken along the line II—II of Figure 1,

Figure 3 shows an alternative arrangement of the ridges shown in Figure 2,

Figures 4 to 8 show alternative ridge profiles,

Figures 9 to 14 show various embodiments of the cleat according to the invention,

Figure 15 shows a transverse section of a variable width cleat,

Figure 16 shows a cross section of an alternative slot profile,

Figures 17 to 19 show alternative ridge arrangements.

In Figure 1 a cleat 10 is shown which is moulded from methyl methacrylate in the

form of a knob for a pull cord of, for example, an electric light switch. The cleat 10 is generally frusto-conical and is formed with an axial groove 12 which opens out of the side of the cleat and extends over the whole length of the body of the cleat. The groove is V-shaped in cross-section and has opposed internal faces which opposed inner faces of the slot 12 are formed converge towards the bottom 16 of the groove and each of which is formed with ridges 14. The ridges 14 of each face are rectilinear and parallel and are inclined to the bottom of the groove, upwardly from one and the same end of the groove.

The groove 12, as shown in Figure 2, is formed with a radiused bottom in order to reduce the danger of the cleat being split longitudinally when a rope is jammed into the groove. A radiused bottom tends to prevent such splitting.

To use the cleat shown in Figures 1 and 2, a pull cord is inserted laterally into the mouth of the groove 12. The cord is then pulled in the direction X shown in Figure 1, and the ridges 14, which grip the cord as soon as it has entered a short way into the groove, direct the cord along the line of the ridges towards the central axis 16. The cord is thus firmly jammed into the groove, any further force on the cord in the direction X only causing it to jam more tightly into the groove. The width of the groove 12 and angle of inclination of the opposed faces are chosen in dependence upon the diameter of the cord to be used, so that whilst the cord easily fits into the mouth of the groove, it will be tightly jammed before or when it reaches the bottom of the groove.

The angle A at which the ridges are inclined to the bottom 16 of the groove can

[Price

be varied depending upon the nature of the cord to be used. The angle of 45° is particularly suitable, but wide variations from this value is permissible within the scope of the invention.

In a modification of the cleat 10, the ridges 14 are arcuate in cross-section, as shown in Figures 17 and 18. In a further modification of the cleat 10 the angle at which the ridges are directed towards the bottom of the groove in the cleat, changes at a point along their length as shown in Figure 19. In the modification of Figure 19, the angle at the mouth of the groove is shown as 45° , which changes to 90° half way down the depth of the groove. Although it is not illustrated it is also envisaged that the angle may change more than once.

The ridges 14 on opposite faces of the groove 12 are directly opposite one another as shown in Figure 2 or in a staggered relationship as in the modified embodiment shown in Figure 3. The profile of the ridges 14 may take any of the forms shown in Figures 4 to 8, the profiles shown in Figures 7 and 8 being particularly, though not exclusively suitable for use with a ball-chain.

The ridges 14 may continue round the bottom of the groove so that in an embodiment otherwise like that shown in Figure 2 the ridges would be continuous across one face of the groove, round the radiused bottom, and across the other face. Where the ridges on the two faces of the groove are staggered, as in Figure 3, the ridges may run across one side and taper off part-way round the radiused bottom of the groove.

In Figure 9 is shown a multi-groove cleat of e.g. nylon, of which each groove is similar to the groove 12 in the cleat 10 and which is adapted to be secured to a fixed structure such as a boat deck or a wall, by way of screws passing through holes 18 with which it is formed.

It will be appreciated that although the cleat shown in Figure 9 has the ridges oriented similarly in all its grooves, so as to grip a plurality of cords all being pulled in a common direction, the ridges of some of the grooves could be disposed to hold cords in tension in the opposite direction.

In Figure 10 is shown a form of swivel-cleat, which has a groove 19 similar to the groove 12 of the cleat 10, and which is formed with holes 20 enabling it to be pivoted to a bar passed through the holes 20 and rigidly secured to some supporting structure.

Figures 11 to 14 show various multi-groove cleats which can be mounted either on fixed structures or used to interconnect a plurality of ropes and all of which have a number of grooves, each groove being similar to the groove 12 of the cleat 10.

The embodiment illustrated in Figures 11 to 14 may be designed to hold cords under tension either all in a common direction or in respective mutually opposite directions, i.e. to act as a joining cleat to connect together two or more cords.

In Figure 15 is shown a cleat which is made up from two side checks 22 and 24 clamped together onto a distance piece 26 by means of a screw 28 to provide a groove. The head of the screw 28 is recessed into a countersunk hole in the side cheek 22, the cheek 24 being formed with a tapped bore in which the thread of the screw engages. The thickness of the distance piece 26 is selected when the cleat is assembled to suit the diameter of the cord or rope to be used with the cleat.

Each of the two side checks 22 and 24 are formed with ridges and the groove in the assembled cleat is thus similar to the groove 12 in the cleat 10 except that the distance piece 26 which forms the bottom of the groove is also formed on its upper edge (as shown in Figure 15) with ridges. If it is desired to jam more than one rope or cord in the same groove of a cleat, then the groove is of a Y profile as shown in Figure 16. The V shaped portion of the groove is similar to the groove 12 of the cleat 10 and thus the rope or cord by the time it has been pulled to the bottom of the V portion of the groove is tightly held against longitudinal movement. It can however be forced to the bottom of the groove which is made of sufficient depth to allow two or more ropes or cords to be fitted on top of one another.

It is to be understood that any of the embodiments described above may be made from any suitable material or materials such as wood, plastics, elastomeric materials, ceramics or metal.

WHAT I CLAIM IS:—

1. A jamming cleat having a groove opening out of one side and extending over the whole length of the cleat, the groove having opposed internal faces which converge towards the bottom of the groove and ridges on each face, the ridges on both faces being inclined to the base of the groove upwardly from one end of the groove.
2. A cleat as claimed in claim 1 wherein the groove is of V-section.
3. A cleat as claimed in claim 1 wherein the groove is of Y-section.
4. A cleat as claimed in any preceding claim wherein the ridges formed on one of the opposed internal faces of the groove are directly opposite the ridges formed on the other such face.
5. A cleat as claimed in any of claims 1 to 3 wherein the ridges formed on one of the opposed internal faces of the groove are in a staggered relationship with the ridges formed on the other such face.

6. A cleat as claimed in any preceding claim wherein the ridges are rectilinear and parallel.

7. A cleat as claimed in any of claims 1
5 to 5 wherein the ridges are curved along their length.

8. A cleat as claimed in claim 6 wherein the angle of inclination of the ridges to the bottom of the groove changes intermediate
10 the length of the ridges.

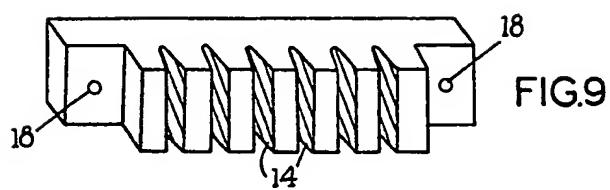
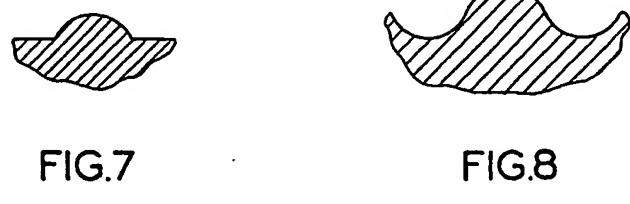
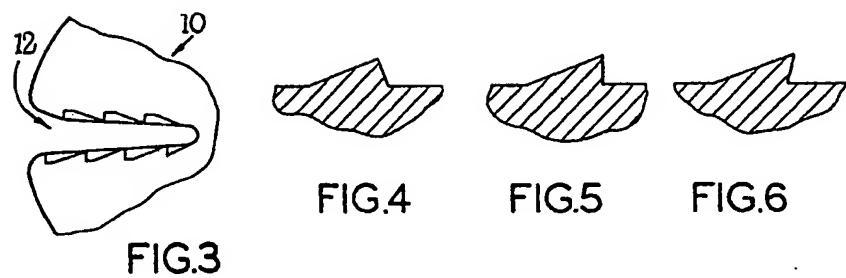
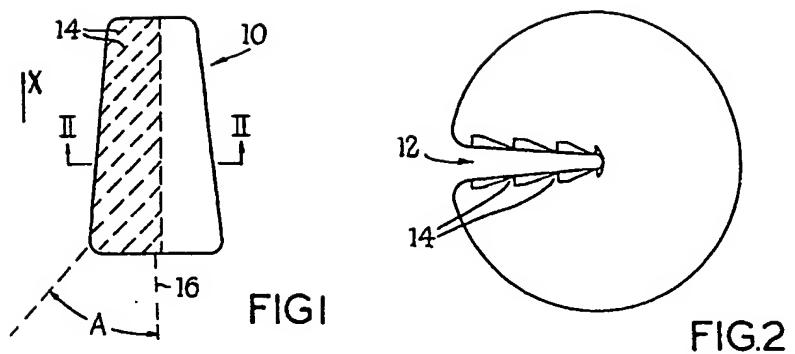
9. A cleat as claimed in any preceding claim wherein the bottom of the said groove is rounded.

10. A cleat as claimed in any preceding
15 claims and formed as an assembly by component parts comprising a centre piece, a pair of side pieces and means securing the side pieces to the centre piece on opposite sides thereof, the side pieces each having a respective face which faces when the side pieces are so secured, constitute the said opposed internal faces of the groove in the cleat.

11. A cleat substantially as described with reference to the accompanying drawings. 20 25

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1,010,686 COMPLETE SPECIFICATION

2 SHEETS

*This drawing is a reproduction of
the Original on a reduced scale.
SHEETS 1 & 2*

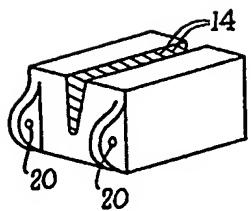


FIG.10

FIG.2

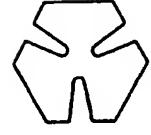
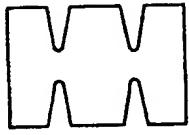
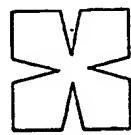
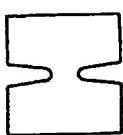


FIG.11

FIG.12

FIG.13

FIG.14



FIG.6

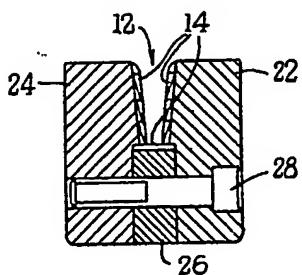


FIG.15

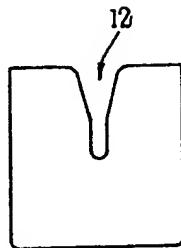


FIG.16

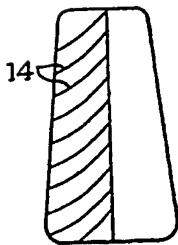


FIG.17

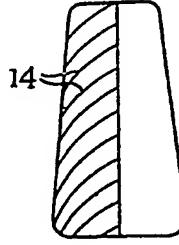


FIG.18

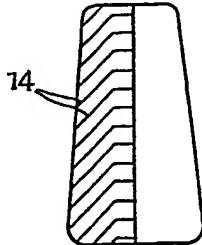


FIG.19

1,010,686 COMPLETE SPECIFICATION
2 SHEETS This drawing is a reproduction of
the original on a reduced scale.
SHEETS 1 & 2

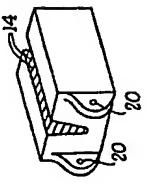


FIG.10

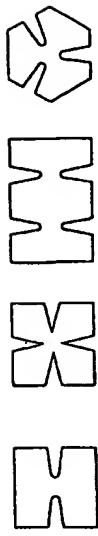


FIG.11 FIG.12 FIG.13

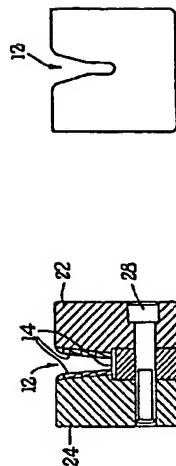


FIG.14 FIG.15

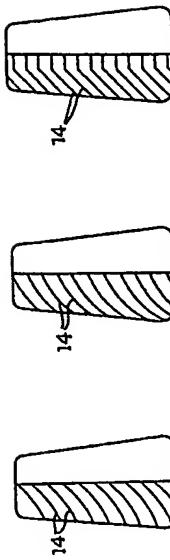


FIG.17 FIG.18

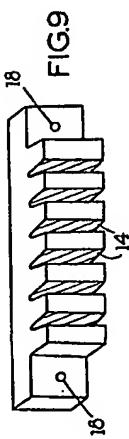


FIG.19

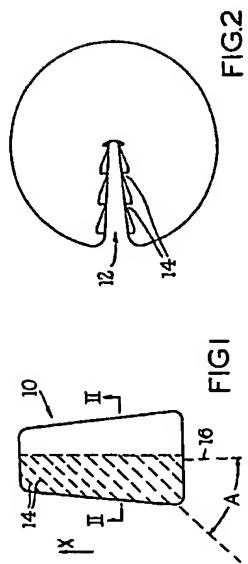


FIG.1

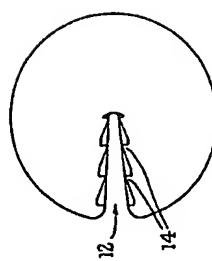


FIG.2

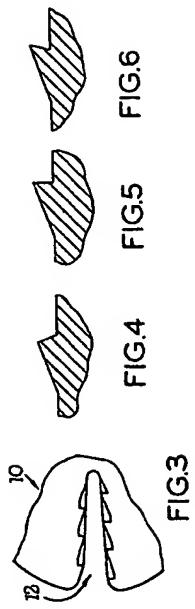


FIG.3



FIG.4 FIG.5 FIG.6



FIG.5



FIG.6



FIG.7



FIG.8

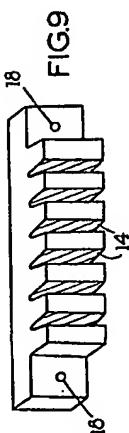


FIG.9